stitialis (?), *Eupomaceutrus leucostictus*, *Teuthis hepatus*, *Teuthis cæruleus*, *Teuthis bahianus*, *Lactophrys triqueter*, *Chilomycterus antillarum*, *Scorpæna plumieri*, and *Scorpæna grandicornis*. All of these are evidently species borne northward in the Gulf Stream. D. S. J.

Eigenmann on Blind Vertebrates. — In *Science* for March 30, Dr. Carl H. Eigenmann publishes his address as President of the Indiana Academy of Sciences on "Degeneration of the Eyes of the Cold-Blooded Vertebrates of the North-American Caves." In this he discusses in detail the eye degeneration of the cave salamanders and cave blind-fishes. He concludes that "degeneration has not proceeded in the reverse order of development. Rather the older normal stages of ontogenetic development have been modified into the more recent phyletic stages through which the eye has passed. The adult degenerate eye is not an arrested ontogenetic stage of development but a new adaptation, and there is an attempt in ontogeny to reach the degenerate adult condition in the most direct way possible." D. S. J.

Microbdella biannulata. — Under this name J. Percy Moore[1] describes a remarkable leech of the family Glossiphonidæ, recently discovered by him in the mountain region of North Carolina, attached to the body of the salamander *Desmognathus fusca*. Leeches of the family named have somites ordinarily composed each of three rings about equal in width. In Microbdella, however, a typical somite is biannulate dorsally, uniannulate ventrally. The two rings into which the somite is divided on the dorsal surface are not of equal width, the anterior one being much broader and corresponding evidently with the first and second rings of a typical somite of Glossiphonia. The segmental sense organs of the dorsal surface are situated in the posterior half of the broad anterior ring. The single broad ring of which the somite is composed on the ventral surface is clearly equivalent to all three rings of a somite of Glossiphonia.

Moore's discovery shows the correctness of two general conclusions recently announced by W. E. Castle[2] as a result of studies made chiefly on Glossiphonia:

1. The sensory ring of the leech somite is the *middle*, not the anterior ring of the somite, as has been generally assumed hitherto.

[1] *Proc. Acad. Nat. Sci. Phila.*, April, 1900.

[2] *Proc. Amer. Acad. Arts and Sci.*, February, 1900.

2. A biannulate condition of the leech somite has probably preceded phylogenetically the triannulate condition; still earlier the somite was probably uniannulate, as in the chætopods. The simple uniannulate somite became biannulate by the separation of a narrow posterior ring from the rest of the somite; the triannulate condition was reached by the separation of a narrow ring at the anterior end of the somite, the sensillæ remaining on the middle ring.

These conclusions have been reached quite independently by Moore, who presents incontrovertible evidence in their support. He further expresses the opinion that the shorter somites commonly found at either end of the body of a leech are not, as they are usually regarded, "abbreviated" somites once multiannulate, but rather represent "stages of development arrested or in progress" from the uniannulate to the multiannulate condition.

The number of somites in the body of Microbdella is probably the same as in Glossiphonia (Clepsine) and Herpobdella (Nephelis), though Moore finds some evidence, not to his mind conclusive, of the existence of an additional somite at the anterior end of the body.

Locomotion of Solenomya. — Solenomya and its relatives show three methods of locomotion which have been studied by G. A. Drew.[1] The first is well represented in Yoldia. This clam possesses a spatula-like foot split into two plates at its distal end. The animal drives this foot into the mud, with the distal flaps held together. These are then expanded and serve as an anchor so that the contraction of the longitudinal muscles of the foot draws the animal through the mud to the place where the foot is anchored. There is no reason to suppose that these mollusks creep about on the expanded foot as snails do. The second method of locomotion, that of leaping, is seen in Solenomya, and especially in Yoldia. When the animal rests sidewise on a smooth surface, the foot is protruded and turned under the lower valve. If the foot is then suddenly contracted, the shell may be thrown end for end some inches. The third method of locomotion is that of swimming. This is accomplished by the vigorous ejection of water from the mantle cavity. The mantle lobes are united except at their anterior and posterior ends. By the separation of the valves, through the action of the elastic ligament, the mantle chamber is filled with water. The anterior opening is then closed by the foot, and by a vigorous

[1] Drew, G. A. Locomotion in Solenomya and its Relatives, *Anat. Anz.*, Bd. xvii, pp. 257–266, 1900.